What is claimed is:

1. A multi-energy polarization imaging system comprising:

a light source for illuminating a target with a first quantity of light having a first wavelength and a second quantity of light having a second wavelength, wherein the second wavelength is different than the first wavelength;

a polarization-state generator for generating a polarization state for each of the first and second quantities of light, the polarization-state generator comprising a first polarizer through which the first and second quantities of light are transmitted before entering a first waveplate;

a polarization-state receiver for evaluating a resulting polarization state of the first and second quantities of light following illumination of the target, the polarization-state receiver comprising a second waveplate through which the first and second quantities of light are transmitted before entering a second polarizer;

an optical image-capture device for capturing a first image of the target illuminated by the first quantity of light and a second image of the target illuminated by the second quantity of light; and

a processing unit for assigning a weighting factor to at least one of the first and second images and evaluating a weighted difference between the first and second images to generate a multi-energy image of the target.

2. The system according to claim 1, wherein the optical image-capture device is a charge-coupled device.

3. The system according to claim 2, wherein the charge-coupled device is positioned in optical alignment with the polarization-state receiver to capture the first and second images.

4. The system according to claim 1, wherein the light source comprises a laser.

5. The system according to claim 1, wherein the light source is configured to emit light in a planar geometry, fan-beam geometry, pointwise illumination, or any combination thereof.

6. The system according to claim 1, wherein the first and second waveplates are each a quarter-wave retarder.

7. The system according to claim 6, wherein the quarter-wave retarders forming the first and second waveplates are rotated at an angular-velocity ratio of 5:1.

8. The system according to claim 1, wherein the polarization-state generator and the polarization-state receiver are generally linearly aligned on opposite sides of the target.

9. The system according to claim 1, wherein the polarization-state receiver is positioned to evaluate the resulting polarization state of the first and second quantities of light reflected by the target.

10. The system according to claim 1 further comprising a computer readable memory for storing information to be used by the processing unit for determining a suitable wavelength for each of the first and second quantities of light.

11. The system according to claim 10, wherein the processing unit comprises an artificial fuzzy neural network that uses information stored in the computer readable memory to determine a suitable wavelength for each of the first and second quantities of light for the conditions at a time when the multi-energy image is to be generated.

12. The system according to claim 1, wherein the optical image-capture device converts the first captured image into a first Mueller matrix of the target and the second captured image into a second Mueller matrix of the target.

13. A method for generating a multi-energy image of a target, the method comprising the steps of:

emitting a first quantity of light having a first wavelength and a second quantity of light having a second wavelength that is different than the first wavelength;

creating an initial polarization state for each of the first and second quantities of light by polarizing and then retarding one component of each of the first and second polarized quantities of light relative to another component of the first and second quantities of light;

directing the polarization state for each of the first and second quantities of light generally toward the target;

analyzing a resulting polarization state for each of the first and second quantities of light by retarding one component of the first and second quantities of light following illumination of the target relative to another component of the first and second quantities of light, and then polarizing the retarded first and second quantities of light;

capturing a first image of the target illuminated by the first quantity of light and a second image of the target illuminated by the second quantity of light;

weighting at least one of the first and second images; and

generating the multi-energy image of the target by evaluating a weighted difference between the first and second images.

14. The method according to claim 13, wherein the step of creating an initial polarization state comprises the steps of:

linearly polarizing the first and second quantities of light; and

then retarding at least one of the ordinary and extraordinary components of the linearly-polarized light with a quarter-wave retarder to create a phase angle between the ordinary and extraordinary components.

15. The method according to claim 13, wherein the step of analyzing the resulting polarization state comprises the steps of:

analyzing a resulting phase angle between the ordinary and extraordinary components of the first and second quantities of light following interaction of the first and second quantities of light with the target; and

then linearly polarizing the first and second quantities of light.

16. The method according to claim 13, wherein the step of weighting at least one of the first and second images comprises the steps of:

determining a Mueller matrix for each of the first and second images;

determining a weighting factor suitable for at least one of the first and second images; and

changing at least one of the first and second images by the value of the weighting factor.

17. The method according to claim 13, wherein the step of generating the multi-energy image of the target comprises the steps of:

determining a difference between the at least one weighted image and the remaining image;

generating a Mueller matrix for the difference between the two images; and

displaying an image generated from the Mueller matrix for the difference between the two images.

18. The method according to claim 13, wherein the step of emitting a first quantity of light having a first wavelength and a second quantity of light having a second wavelength comprises the steps of:

evaluating an ambient environment of the target;

comparing the ambient environment of the target to known conditions stored in a computer readable memory; and

determining suitable first and second wavelengths based on the comparison between the evaluated ambient environment of the target and the known environments in the computer readable memory using an artificial fuzzy neural network.